We claim:

1. A method for data transmission via a radio interface in a radio communications system, which comprises the following steps:

assigning one connection via a radio interface a given number of at least two data channels, whereby the data channels can be distinguished by an individual spread code;

transmitting in a data channel data symbols and, in addition, midambles with known symbols; and

wherein a number of midambles used for the connection is less than the given number of data channels.

2. The method according to claim 1, which comprises using one midamble for the connection.

3. The method according to claim 1, which comprises superimposing the data symbols for the at least two data channels of a connection in the transmitter.

4. The method according to claim 3, which comprises superimposing the data symbols with equal weighting.

5. The method according to claim 3, which comprises superimposing the data symbols in a first category with a higher weighting than the data symbols in a second category.

6. The method according to claim 1, wherein a ratio of a mean power per symbol between the midamble and the data symbols is variable.

7. The method according to claim 1, which comprises evaluating the midamble for channel estimation at a receiving end, with a length of an estimated channel impulse response being variable.

8. The method according to claim 1, which comprises evaluating the midamble for channel estimation at a receiving end, with a length of the midamble being variable.

9. The method according to claim 1, wherein the data channels have different data rates.

10. The method according to claim 1, wherein the radio interface includes a TDMA component, so that a finite burst comprising the midamble and data symbols is transmitted in a respective time slot, and which further comprises basing an assignment strategy for connections to a time slot on a number of midambles to be estimated per time slot.

11.   A radio station for data transmission in a radio
communications system via a radio interface, comprising:

a control device for assigning at least two data channels to a
connection in a radio communications system;

      wherein each data channel can be distinguished by an
      individual spread code, and

      wherein data symbols and, in addition, midambles with
      known symbols are transmitted in a data channel;

a signal processor using a number of midambles for the
connection, whereby the number of midambles is less than a
number of data channels.

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add B3